

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PS-5 PCT	<b>FOR FURTHER ACTION</b>	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US04/42016	International filing date ( <i>day/month/year</i> ) 13 December 2004 (13.12.2004)	(Earliest) Priority Date ( <i>day/month/year</i> ) 12 December 2003 (12.12.2003)
Applicant PARALLEL SYNTHESIS TECHNOLOGIES, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the Report**

- a. With regard to the language, the international search was carried out on the basis of:



the international application in the language in which it was filed.



a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

- b.  With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I

Certain claims were found unsearchable (See Box No. II)

Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 2



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

- b.

none of the figures is to be published with the abstract.

**Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)**

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

- a sequence listing  
 table(s) related to the sequence listing

b. format of material

- on paper  
 in electronic form

c. time of filing/furnishing

- contained in the international application as filed  
 filed together with the international application in electronic form  
 furnished subsequently to this Authority for the purposes of search

2.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

**Box No. II      Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
  
  
  
  
2.  Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
  
  
  
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III      Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.: 1-21
  
  
  
  
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

- Remark on Protest**
- |                          |   |
|--------------------------|---|
| <input type="checkbox"/> | The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.   |
| <input type="checkbox"/> | The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation. |
| <input type="checkbox"/> | No protest accompanied the payment of additional search fees.   |

**Box IV TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)**

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

**NEW ABSTRACT**

A microcontact printing pin (20) for depositing a liquid on a substrate includes a printing tip at a first end and a reservoir (14), which holds a supply of a printing fluid, communication with the print tip (15). A fluid delivery channel (12) extends between the reservoir and the printing tip and the channel has a tapered shape decreasing in width from the reservoir to the printing tip. This tapered shape ensures that the delivery of the printing fluid to the printing is smooth, accurate and controllable. The printing tip portion may also be thinned so that the portion provided with the reservoir and a stepped portion between the reservoir and the thinned printing tip portion that eliminates prespotting.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/42016

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B01L 3/02

US CL : 422/100, 99; 436/180; 73/863.32, 864, 864.01

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 422/100, 99; 436/180; 73/863.32, 864, 864.01

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 6,943,035 B1 (DAVIES et al.) 13 September 2005, entire document	18, 20-21
X	US 6,101,946 A (MARTINSKY) 15 August 2000, entire	1-3 and 6-8
X	US 2002/0094304 A1 (YANG et al.) 18 July 2002, entire document	1-3 and 6-8
Y, P	US 6,808,683 B2 (GILBERT) 26 October 2004, entire document	4-5
A,P	US 6,723,569 B1 (MOORE et al.) 20 April 2004, entire document	1
A	US 5,957,167 A (FEYGIN) 28 September 1999, entire document	1
A,E	US 6,835,352 B2 (Ito et al.) 28 December 2004, entire document	1
A	US 2003/0086827 A1 (HASLAM et al.) 08 May 2003, entire document	1
A	IS 2003/0148539 A1 (VAN DAM et al.) 07 August 2003, entire document	1



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

12 September 2005 (12.09.2005)

Date of mailing of the international search report

25 OCT 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

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**BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-21, drawn to a pin for depositing a liquid on a substrate.

Group II, claim(s) 18-21, drawn to a microcontact printing pin holder for use in producing a microarray.

Group III, claim(s) 22, drawn to a method of making a pin for depositing a liquid on a substrate.

The inventions listed as Groups (I and III) and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Groups I and III do not have a corresponding technical feature to the special technical features of Group II, first planar member, first aperture, and elastomeric member.

The inventions listed as Groups I and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Group I does not include a corresponding technical feature the special technical features of the patterning and thinning steps of Group III

**Continuation of B. FIELDS SEARCHED Item 3:**

East

Keywords; pin, rod, reservoir, tip, print\$, channel, conduit, capillary, tube

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